BENEFITS, BARRIERS, AND OPPORTUNITIES FOR ENERGY OUTREACH IN EXTENSION: A MIXED-METHODS NEEDS ASSESSMENT

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EXTENSION'S RELEVANCY

"If Extension is to succeed in the 21st century, it must prepare its administrators, faculty, and staff to value diversity and accept change as necessary for the viability of the organization." (ECOP, 2002)

SUSTAINABLE LIVING

"Cooperative Extension is in a prime position to teach individuals and communities how to live and work sustainably." (Elliott et al., 2008)

RENEWABLE ENERGY

"Despite having two out of the four charges of the national Extension system related to energy, Extension activities in these areas are relatively poorly defined." (Geiger, 2014)

SCOPE OF WORK

Mixed-methods needs assessment performed from April 2013 - June 2014

National Extension Energy Summit

- Online survey sent to all attendees

National Extension Sustainability Summit

- Focus group interviews with all attendees

Utah State University (USU) Extension

- Online survey sent to all employees

NATIONAL EXTENSION ENERGY SUMMIT

April 29 – May 1, 2013 at Fort Collins, CO

Co-led by CSU, MSU & UWyo

68 participants from 28 states

NATIONAL EXTENSION ENERGY SUMMIT

Online survey sent to all attendees

- 72% response rate

Survey consisted of 27 questions exploring:

1. The opportunities and barriers of renewable energy (RE) in Extension;
2. The size and scale of RE projects that Extension agents engage in; and
3. Perceived clientele support and interest in RE programming

NATIONAL EXTENSION SUSTAINABILITY SUMMIT

October 2-3, 2013 at Park City, UT

Co-led by the Western Rural Development Center and USU Extension Sustainability

51 participants

UtahStateUniversity
EXTENSION SUSTAINABILITY

NATIONAL EXTENSION SUSTAINABILITY SUMMIT

Focus group interviews with attendees

- 52% attendee participation rate
- One hour interviews, 26 participants, 5 facilitators

Nine guiding questions exploring:

1. Existence, role, and importance of RE outreach in participants' respective Extension offices
2. Opportunities and restraints of RE programming, outreach, and education within Extension
3. Message framing, marketing, and communication of RE programs to clientele

COMBINED RESULTS

Descriptive statistical analyses applied to online survey results

Focus group coding applied to interviews

Four common themes emerged from the data in each study

Survey and focus group results presented hereafter are merged, offering breadth and depth

RESULTS

1. There is a need for increased energy programming in Extension

RESULTS

Table 1 Level of Agreement to Statements about Clientele Reception to Renewable Energy Programming in Extension

Statement	Score*	N
The majority of my clientele are open to the idea of renewable energy as an alternative energy source.	3.82	33
In teaching about renewable energy, I feel my approach connects well with my clientele.	4.00	33
I receive more positive than negative feedback regarding the renewable energy outreach materials and training I have delivered.	4.21	33

*0 = Strongly Disagree; 5 = Strongly Agree

RESULTS

2. Extension's history of providing unbiased, research-based information must remain central to RE programming and outreach efforts

RESULTS

"The advantage of Extension is that we have over 100 years of history being recognized as providing unbiased, research-documented information. We're not trying to sell anything or promote any particular product, and that's what we do best."

RESULTS

3. Extension needs to form partnerships with outside existing energy entities to best serve the public.

RESULTS

Partnerships with existing energy stakeholders will ensure:

- Knowledge sharing
- Prevent duplicated efforts
- Make the most of overstretched Extension employees' time

RESULTS

4. Cost is the principal driver and barrier in Extension clientele's RE decisions

RESULTS

Table 2 Ranking of Barriers to Extension Clientele's Renewable Energy Decisions

	Ranking*							
	1	**2**	**3**	**4**	**5**	**Mean**	**SD**	**N**
Lack of financial resources	23	3	3	2	0	1.48	0.926	31
Lack of understanding of technology	4	18	5	3	1	2.32	0.945	31
Lack of access to the technology	1	11	14	4	1	2.77	0.845	31
Lack of renewable energy sources (e.g. sunlight, wind)	0	1	8	14	8	3.94	0.814	31
Opposed to renewable energy	2	1	4	5	19	4.23	1.203	31

*1 = Extreme barrier, 5 = Not a barrier

RELEVANCY

RE information and programs will ensure that Extension is at the forefront of solving the nation's energy challenges

RELEVANCY

Connecting RE to traditional Extension foci will:

- Reinforce Extension's role of disseminating research-based and unbiased information to the public
- Illuminate Extension's energy role among federal and state entities
- Bolster Extension's relevancy in the 21st century

UTAH-BASED PERSPECTIVE

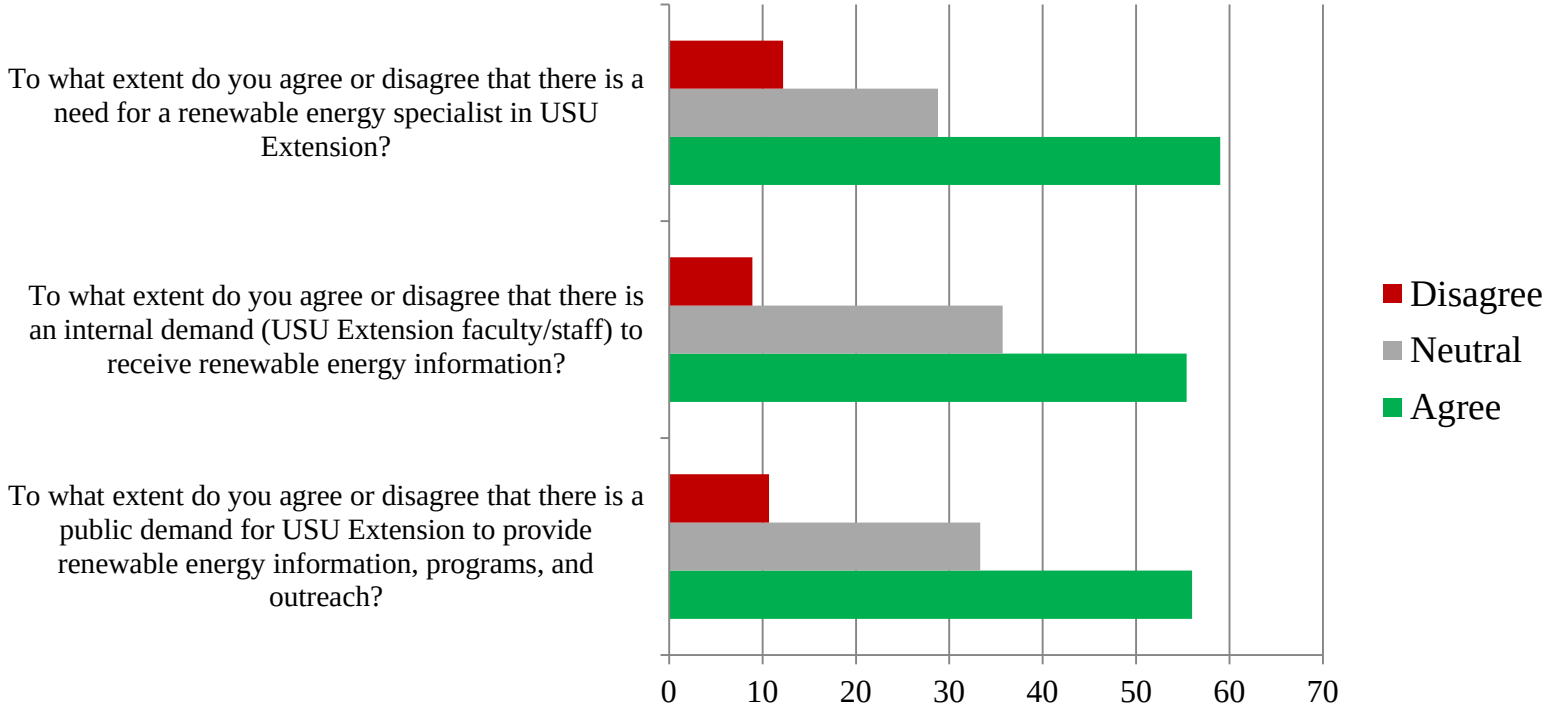
Online survey sent to all USU Extension employees

- 83% response rate (n=195)

Key objectives were to discover USU Extension's level of agreement of:

1. Public demand for USU Extension to provide RE outreach and programs
2. Internal demand for USU Extension to receive RE information
3. Need for a RE specialist in USU Extension

USU EXTENSION EMPLOYEE'S INTEREST IN RE OUTREACH



Extension is Retooling to Address Energy Issues

By Milton Geiger

Energy issues are central to the broader components of sustainability. The thematic areas identified at the 2013 Extension Sustainability Summit – Energy, Food, Land, Water, and Air – are significantly influenced by both the availability of inexpensive energy, primarily fossil fuels, and the associated impacts from their production and consumption. Examples of the interconnection of energy to sustainability abound. The USDA estimates that 15.7 percent of the nation's energy is utilized in the food system (Canning et al., 2010). Land use changes, such as urban sprawl and ex-urban development, are enabled by the availability of inexpensive fossil energy for transportation. Thermoelectric generation accounts for 41 percent of our country's freshwater usage (Kenny et al., 2009). Finally, the quality of our air, from local smog to climate change issues, is greatly impacted by our consumption of fossil fuels.

of this diversity is provided by an entire issue of Rural Connections (Summer 2013) devoted exclusively to energy topics, ranging from biofuels to hydraulic fracturing to wind turbines. Energy has many facets that are rightfully receiving the attention of the national land-grant university system.

To individual Extension clientele, energy is an issue that impacts both their wallets and lifestyle. Across the entire economy, per capita energy expenditures total nearly $4500 per year on energy, compared to approximately $4250 for food (US EIA, 2011 and USDA ERS, 2013)! Energy expenditures offer both a chance to reduce costs, indeed through technology and behavior household energy use has declined over the past 30 years, but it also represents a potentially enormous ($1.4 trillion) new market, especially for rural clientele (US EIA, 2012). Many Extension clientele are also choosing to place a personal

GEOGRAPHY AND ENERGY ATTITUDES

Respondents were then broken into three subgroups to evaluate if geographic location affects energy values

1. Campus specialists (Logan, UT)
2. Urban-based county employees
3. Rural-based county employees

GEOGRAPHY AND ENERGY ATTITUDES

Table 1: Descriptive Statistics comparing three subgroups' responses to "How environmentally harmful do you think coal-fired power plants are?"

	Campus Specialists	Urban	Rural
Moderately/Very Harmful	42 (74%)	35 (78%)	38 (53%)
Somewhat Harmful	10 (17%)	7 (15%)	17 (24%)
Slightly/Not Harmful At all	5 (9%)	3 (7%)	16 (23%)
Total	57 (100%)	45 (100%)	71 (100%)

Table 2: Descriptive Statistics comparing three subgroups' responses to "How environmentally harmful do you think wind energy is?"

	Campus Specialists	Urban	Rural
Moderately/Very Harmful	1 (2%)	0 (0%)	1 (1%)
Somewhat Harmful	12 (21%)	3 (7%)	4 (6%)
Slightly/Not Harmful At all	43 (77%)	42 (93%)	68 (93%)
Total	56 (100%)	45 (100%)	73 (100%)

GEOGRAPHY AND ENERGY ATTITUDES

Table 3: Pearson's Chi-Square test comparing the three subgroups' perceived harmfulness of each method of generating electricity.

	Value	df	Asymp. Sig. (2-sided)
Coal	10.875	4	.028*
Wind	10.300	4	.022*
Solar	16.539	4	.001*
Geothermal	7.737	4	.090
Hydro	21.060	4	.000*
Nuclear	5.455	4	.249
Oil	4.588	4	.339
Natural Gas	5.395	4	.253

*Statistically significant at the $p<0.05$ level

WHY IS THIS IMPORTANT?

The statistically significant difference in perceived harmfulness between the subgroups confirms diverging attitudes toward fossil fuels and RE; yet respondents still indicated a majority of support for RE

HOW DO I DELIVER THIS SORT OF INFORMATION?

USU Extension employees' preferred form of delivering RE information:

1. Energy website maintained by USU Extension
   - 83% of respondents "strongly agree"
2. Fact sheets
   - 80% of respondents "strongly agree"
3. In-person workshops
   - 71% of respondents "strongly agree"
4. Renewable energy specialist to refer to
   - 68% of respondents "strongly agree"

SUMMARY

The time for Extension to secure its place in the emerging RE industry is now

THANK YOU!

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Utah State University Extension Sustainability

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